DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-024650
Date Inspected: 24-Jun-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1930
Location: Job Site

CWI Name:	Steve Jensen and Steve Mc Conne			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower North Shaft Splice #3 @Elevation 114 meters;

At Northeast (B-C) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Salvador Sandoval continuing to perform production welding on the top half of the lower splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. The welder was noted 3F (vertical) fillet welding the splice plate to interior corner closure plate of the tower shaft. This QA Inspector observed ABF personnel using a propylene gas torch to preheat the plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. During the shift while fillet welding was still continuing, fellow QA Scott Croff took over the observations of the production welding.

At Tower North Shaft Splice #3 @Elevation 114 meters;

At North (C-D) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Xiao Jian Wan continuing to perform production welding on the top half of the lower splice plate using the self shielded

Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-2. The welder was noted 2F (horizontal) fillet welding the top of the splice plate to interior corner closure plate of the tower shaft. This QA Inspector observed ABF personnel using a propylene gas torch to preheat the plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-2. During the shift while fillet welding was still continuing, fellow QA Scott Croff took over the observations of the production welding.

At Tower Base Elevation 13Meters Shear Plate Electro Slag Welding (ESW);

This QA was present at the Tower Base to observe the Electro Slag Welding of the weld number N-042 located at 'J' position per ABF weld map. The weld joint to be welded is a 60mm shear plate to Tower North Shaft skin plate (70mm) 'A', T- joint located at the corner of tower North shaft skin plates 'A' and 'B'. ABF intends to implement Caltrans approved welding procedure ABF-WPS-ESW-150T in performing the ESW.

Upon QA's arrival, ABF personnel were noted preparing to weld the shear plate T- joint by checking all the necessary electrical and water hose weld shoe cooling connections are all in place prior to commence ESW. It was noted that three weld shoes were in position at each opposing side of the joint and so with the consumable guide tube that was placed in between the joint gap which was separated by consumable ceramic insulators. Other ABF personnel that were noted assisting the preparation of the ESW include ABF Production Manager John Callaghan and Mr. Bob Turpin of Oregon Institute of Technology.

The fit up alignment was jointly checked by ABF QC Steve Mc Connell and this QA. The root gap was measured from bottom to top and the result noted was 16mm minimum and 22mm maximum which deemed in compliance to the WPS.

At 1250hours, due to absence of ABF Operations Superintendent Dan Ieraci, ABF Production Manager John Callaghan took over and performed the check list verification with ABF QC Steve Mc Connell.

At around 1300hours, all ABF personnel involved in the ESW converged and performed a pre-operations meeting reminding each and everyone's role in performing their job. After the meeting, ABF personnel went to their own respective assignment and positioned themselves and got ready for the start.

While everybody was in position, the controller at the deck has noticed that the filler wires were not moving or got jammed inside the consumable guide. ABF has pulled out the two filler wires that were already inside the guide tube and noted there was kink on both filler wires that prevented the wires from moving. It took almost two hours to complete the re-insertion and testing of the filler wires before they were ready to start.

Initial firing of the ESW has started at 1451 hours and it was successful and that the welding parameters have stabilized. The operation continued until the successful completion of the joint at around 1857 hours.

WELDING INSPECTION REPORT

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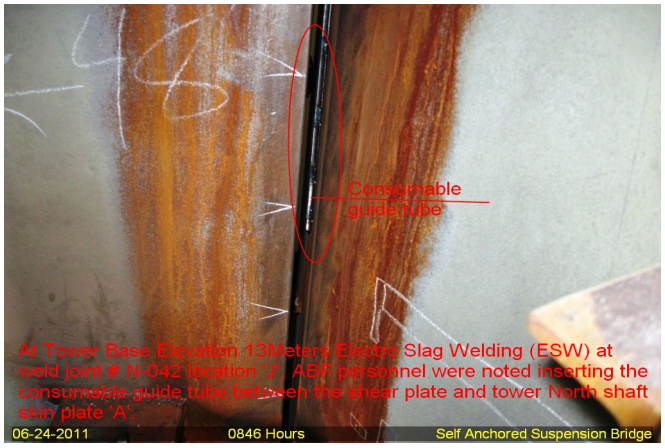

Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer